

**Answer to leftover chat room question from Sean Swei's  
LEARN/Seedling Seminar presentation, January 13, 2015**

Question: What types actuator loads did you see when twisting the wings in the tunnel at high  $q$ ?

*Nick Cramer:*

We have not finished processing the load cell data from the second flex model so we do not know exactly what the loads the actuators were seeing. We can estimate how much force the actuators were seeing by using the recorded moment coefficient and back calculating the total moment for the wing span and assuming each wing is loaded symmetrically. We did not run a lot of high  $Q$  runs and the ones we did were oscillating the twist or in a neutral position. We found that for the runs we did run the highest loads were around 0.2 lb ft. We also know that the servos were capable of outputting 2.1 lb ft of force and even running them at half power for most of the wind tunnel testing they never driven back, so that provides us with a good ceiling.